Release notes for ENDF/B Development n-048_Cd_114 evaluation

April 26, 2017

- `psyche` Warnings:
  1. Non-threshold reaction with Q value differing from PSYCHE's expectations
     FILE 3 / SECTION 107 / THE CALCULATED Q 1.57673E+06 DISSAGREES WITH THE GIVEN Q 1.67150E+06 (0): Iffy Q

```
FILE  3
   SECTION 107
            THE CALCULATED Q  1.57673E+06 DISSAGREES WITH THE GIVEN Q  1.67150E+06
```

- `groupie` Errors:
  1. Very small elastic cross section found
     0: Small elastic

```
 Multi-Group and Multi-Band Parameters from ENDF/B Data (GROUPIE 2015-2)
 ------------------------------------------------------------------------------
 ENDF/B Input and Output Data Filenames
 ENDFB.IN
 ENDFB.OUT
... [97 more lines]
```

- `fudge-4.0` Errors:
  1. Calculated and tabulated Q values disagree.
     reaction label 12: n[multiplicity:'2'] + Cd113 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -8924614.470535278 eV vs -9.0407e6 eV!
```

  2. Calculated and tabulated Q values disagree.
     reaction label 13: n[multiplicity:'3'] + Cd112 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -15464692.61637878 eV vs -1.5583e7 eV!
```

  3. Calculated and tabulated Q values disagree.
     reaction label 14: n + H1 + Ag113 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -10158875.12950134 eV vs -1.027e7 eV!
```

  4. Calculated and tabulated Q values disagree.
     reaction label 15: n + H2 + Ag112 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -16413839.75170898 eV vs -1.6535e7 eV!
```

  5. Calculated and tabulated Q values disagree.
     reaction label 16: n + H3 + Ag111 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -16631662.94645691 eV vs -1.6743e7 eV!
```

  6. Calculated and tabulated Q values disagree.
     reaction label 17: Cd115 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 6259227.04536438 eV vs 6.148e6 eV!
```

7. Calculated and tabulated Q values disagree.
reaction label 18: n + He4 + Pd110 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -3978316.258361816 eV vs -4.077e6 eV!
```

8. Calculated and tabulated Q values disagree.
reaction label 19: H1 + Ag114_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -4171426.319900513 eV vs -4.077e6 eV!
```

9. Calculated and tabulated Q values disagree.
reaction label 20: H2 + Ag113_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -7934309.028564453 eV vs -8.0444e6 eV!
```

10. Calculated and tabulated Q values disagree.
reaction label 21: H3 + Ag112_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -10156606.81109619 eV vs -1.0279e7 eV!
```

11. Calculated and tabulated Q values disagree.
reaction label 22: He3 + Pd112_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -10426074.50427246 eV vs -9.04e6 eV!
```

12. Calculated and tabulated Q values disagree.
reaction label 23: He4 + Pd111_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 1747983.53767395 eV vs 1.6715e6 eV!
```

- `njoy2012` Warnings:

1. Message comes from several resonance types that do not support the calculation of angular distributions. Some of them can be used if `Want_SAMRL_RM or Want_SAMRML_BW are true.`
reconr...reconstruct pointwise cross sections in pendf format (0): RECONR/calculation of angular distribution not installed (0)

```
 ---message from rdf2bw---calculation of angular distribution not installed.
   samm max legendre order:  0
```

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 16
                          only mf4/mf5 provided
```

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 17
                          only mf4/mf5 provided
```

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 22
                          only mf4/mf5 provided
```

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 28
                          only mf4/mf5 provided
```

6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 32
                          only mf4/mf5 provided
```

7. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (5): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 33
                          only mf4/mf5 provided
```

8. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (6): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 91
                          only mf4/mf5 provided
```